



# Virtual Energy Audit

## What is this Technology?

By analyzing end-user data inputs on building operations, utility usage, existing equipment, and other variables, this technology identifies retrofit solutions that reduce energy use and environmental impact without the need for an on-site energy audit. It represents a significant innovation relative to similar tools in that it can not only perform retrofit analysis on single buildings but can also prioritize the most cost-effective energy conservation measures (ECMs) across a portfolio of buildings. The tool has been designed for users with basic building knowledge and limited or no modeling background.

## Why is GSA Interested?

Currently recognized standards and guidelines for conducting on-site building energy audit and retrofit assessments are time-consuming, costly, rely on expert opinion, and focus on one building at a time. This technology promises replicable and prioritized insights into retrofit options with an accuracy and efficacy comparable to measures derived by conventional means. The technology also promises to significantly reduce the amount of time and expertise required to gather and input data and enable prioritized investment decisions across a portfolio of buildings.



**ENERGY EFFICIENCY** The energy efficiency improvements resulting from the use of this tool will depend on the actions taken and resources available to implement suggested retrofit options.



**COST-EFFECTIVENESS** Users can select options based on criteria such as return on investment, initial capital cost, payback period, and energy savings to prioritize retrofit options.



**OPERATIONS & MAINTENANCE** As a decision and planning support tool and methodology, this technology does not create any foreseeable operations and maintenance issues. According to the manufacturer, the user-friendly interface enables building managers and operators to easily contribute and input building data.



**DEPLOYMENT POTENTIAL** The virtual energy audit is applicable to any building type and has the potential for GSA to deploy on national accounts with unique building types, such as land ports of entries and courthouses.

*The Green Proving Ground program has commissioned Oak Ridge National Laboratory to perform real-world measurement and verification of the virtual energy audit in a pilot installation in a federally-owned building. Findings from the evaluation are anticipated to be available in 2016.*



The Green Proving Ground program leverages GSA's real estate portfolio to evaluate innovative sustainable building technologies. The program aims to drive innovation in environmental performance in federal buildings and help lead market transformation through deployment of new technologies.